

## CLAIMS

1. An information recording medium in a disc shape, comprising:  
a first recording layer having (I) a first test writing area to test-write  
5 therein first test-write information for calibration of laser light for recording,  
along a first track path directed from an inner circumferential side to an  
outer circumferential side of said information recording medium, by  
irradiating the laser light thereto, and (II) a first recording area to record  
therein first record information along the first track path, by irradiating the  
10 laser light thereto, in this order from the inner circumferential side; and  
a second recording layer, located on a rear of said first recording layer  
as viewed from an irradiation side of the laser light and having (I) a second  
test writing area to test-write therein second test-write information for  
calibration of the laser light, along a second track path directed from the  
15 outer circumferential side to the inner circumferential side, by irradiating the  
laser light thereto, and (II) a second recording area to record therein second  
record information along the second track path, by irradiating the laser light  
thereto, in this order from the inner circumferential side.
- 20 2. The information recording medium according to claim 1, wherein  
in the first recording area, first address information which indicates  
addresses sequentially given from the inner circumferential side to the outer  
circumferential side, is recorded in advance along the first track path, and  
in the second recording area, second address information which  
25 indicates addresses sequentially given from the outer circumferential side to  
the inner circumferential side, is recorded in advance along the second track

path.

3. The information recording medium according to claim 1, wherein  
in the first test writing area, an area portion of a predetermined size  
5 is used in order of the outer circumferential side to the inner circumferential  
side in each operation of writing the first test-write information, and  
in the second test writing area, an area portion of a predetermined  
size is used in order of the inner circumferential side to the outer  
circumferential side in each operation of writing the second test-write  
10 information.

4. The information recording medium according to claim 1, wherein  
said first recording layer further has a first control information area  
in which first control information for controlling at least one of a recording  
15 operation and a reproduction operation of the first record information is  
recorded, on the outer circumferential side of the first test writing area and  
on the inner circumferential side of the first recording area, and

said second recording layer further has a second control information  
area in which second control information for controlling at least one of a  
20 recording operation and a reproduction operation of the second record  
information is recorded, on the outer circumferential side of the second test  
writing area and on the inner circumferential side of the second recording  
area.

25 5. The information recording medium according to claim 1, wherein said  
first recording layer further has a space area in which first address

information which indicates an address in the first track path is recorded, which is adjacent to the outer circumferential side of the first test writing area, and in which other information is not recorded.

5     6.       The information recording medium according to claim 1, wherein the first test writing area and the second test writing area are away from each other in a radial direction of said information recording medium as viewed from a normal direction of said information recording medium, or at least an area portion of the first test writing area into which the first test-write  
10 information is written and at least an area portion of the second test writing area into which the second test-write information is written are away from each other in the radial direction.

7.       An information recording apparatus for recording first information  
15 and second information onto an information recording medium in a disc shape, comprising: a first recording layer to record therein the first information along a first track path directed from an inner circumferential side to an outer circumferential side of said information recording medium, by irradiating laser light for recording thereto; and a second recording layer,  
20 located on a rear of said first recording layer as viewed from an irradiation side of the laser light, to record therein the second information along a second track path directed from the outer circumferential side to the inner circumferential side of said information recording medium, by irradiating the laser light thereto,

25       said information recording apparatus comprising:  
a writing device for writing the first information into said first

recording layer by irradiating the laser light to focus on said first recording layer and writing the second information into said second recording layer by irradiating the laser light to focus on said second recording layer;

5 a test-writing control device for controlling said writing device to test-write first test-write information for calibration of the laser light, into said first recording layer as one portion of the first information, and to test-write second test-write information for calibration of the laser light, into said second recording layer as one portion of the second information; and

10 a recording control device for controlling said writing device (I) to record first record information into said first recording layer, along the first track path as another portion of the first information, on the outer circumferential side of an area in which the first test-write information is test-written, by using the laser light calibrated on the basis of the first test-write information, and (II) to record second record information into said  
15 second recording layer, along the second track path as another portion of the second information, on the outer circumferential side of an area in which the second test-write information is test-written, by using the laser light calibrated on the basis of the second test-write information, after the first and second test-write information are test-written by said test-writing control  
20 device.

8. The information recording apparatus according to claim 7, wherein  
in the first recording area, first address information which indicates addresses sequentially given from the inner circumferential side to the outer  
25 circumferential side, is recorded in advance along the first track path,  
in the second recording area, second address information which

indicates addresses sequentially given from the outer circumferential side to the inner circumferential side, is recorded in advance along the second track path,

said information recording apparatus further comprises an address  
5 reading device for reading the first and second address information, and

said recording control device controls said writing device to (I) record the first record information along the first track path in accordance with the read first address information and (II) to record the second record information along the second track path in accordance with the read second address  
10 information.

9. The information recording apparatus according to claim 8, wherein  
first recording layer has a space area in which the first address information is recorded, which is adjacent to the outer circumferential side of the first test writing area, and in which other information is not recorded, and  
15 said address reading device reads the first address information by accessing the space area.

10. The information recording apparatus according to claim 7, wherein  
20 said information recording apparatus further comprises an area detecting device for detecting areas in which the first and second test-write information is already test-written, and

said test-writing control device controls said writing device to set a start position at each time of writing the first and second test-write  
25 information in accordance with the areas detected by said area detecting device.

11. The information recording apparatus according to claim 7, wherein  
said test-writing control device controls said writing device to use an area  
portion of a predetermined size in order of the outer circumferential side to  
the inner circumferential side in each operation of writing the first test-write  
information, and controls said writing device to use an area portion of a  
predetermined size in order of the inner circumferential side to the outer  
circumferential side in each operation of writing the second test-write  
information.

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12. The information recording apparatus according to claim 7, wherein  
said recording control device (I) controls said writing device to record first  
control information for controlling at least one of a recording operation and a  
reproduction operation of the first record information, on the outer  
circumferential side of the area in which the first test-write information is  
test-written and on the inner circumferential side of an area in which the first  
record information is recorded, in said first recording layer, and (II) controls  
said writing device to record second control information for controlling at  
least one of a recording operation and a reproduction operation of the second  
record information, on the outer circumferential side of the area in which the  
second test-write information is test-written and on the inner circumferential  
side of an area in which the second record information is recorded, in said  
second recording layer.

13. The information recording apparatus according to claim 7, wherein  
said test-writing control device (I) controls said writing device to use such

areas that the first test writing area and the second test writing area are away from each other in a radial direction of said information recording medium as viewed from a normal direction of said information recording medium, or (II) controls said writing device to use such areas that (II-1) at least an area portion of the first test writing area into which the first test-write information is written and (II-2) at least an area portion of the second test writing area into which the second test-write information is written are away from each other in the radial direction.

14. An information recording method in an information recording apparatus for recording first information and second information onto an information recording medium in a disc shape, comprising: a first recording layer to record therein the first information along a first track path directed from an inner circumferential side to an outer circumferential side of said information recording medium, by irradiating laser light for recording thereto; and a second recording layer, located on a rear of said first recording layer as viewed from an irradiation side of the laser light, to record therein the second information along a second track path directed from the outer circumferential side to the inner circumferential side of said information recording medium, by irradiating the laser light thereto, said information recording apparatus comprising: a writing device for writing the first information into said first recording layer by irradiating the laser light to focus on said first recording layer and writing the second information into said second recording layer by irradiating the laser light to focus on said second recording layer,

said information recording method comprising:

a test-writing control process of controlling said writing device to test-write first test-write information for calibration of the laser light, into said first recording layer as one portion of the first information, and to test-write second test-write information for calibration of the laser light, into  
5 said second recording layer as one portion of the second information; and

a recording control process of controlling said writing device (I) to record first record information into said first recording layer, along the first track path as another portion of the first information, on the outer circumferential side of an area in which the first test-write information is  
10 test-written, by using the laser light calibrated on the basis of the first test-write information, and (II) to record second record information into said second recording layer, along the second track path as another portion of the second information, on the outer circumferential side of an area in which the second test-write information is test-written, by using the laser light  
15 calibrated on the basis of the second test-write information, after the first and second test-write information are test-written by said test-writing control process.